

**APPENDIX K: Department of Pharmacology and Toxicology
PhD Written Qualifying Examination**

The PhD written qualifying examination is accomplished thru preparation of a PhD dissertation proposal written in the style of an NIH grant proposal (other formats may be acceptable if the PhD proposal is to be submitted to another funding agency). In general, the written PhD proposal with the following elements should be submitted to the members of the advisory committee and deposited in CardBox for review by all department faculty at least two weeks in advance of the scheduled written and oral PhD qualifying exams.

- Abstract (1/2 page)
- NIH current style biosketch
- Budget and budget justification
- Specific Aims (1-page maximum)
- Research Strategy (6 page maximum) including:
 - Background
 - Significance
 - Innovation
 - Approaches including:
 - potential pitfall/alternative approaches
 - statistical analysis
 - justification or prospective power calculation if using vertebrate animals or human subjects
 - data rigor and reproducibility
 - timeline
- Literature Cited

External Reviewer: The student, with their PI, will propose 2 possible choices for an external reviewer to be approved by the PhD qualifying exam committee. This should be a faculty member (UofL faculty are eligible) with expertise related to the area of study. Nominations of the external reviewer should be presented to the qualifying exam committee **a minimum of two months in advance of the PhD proposal defense**; please include a 1-2 paragraph description of their experience/expertise. The qualifying exam committee will choose and inform the student and PI within 1 week.

Evaluation: Each member of the PhD dissertation committee as well as the external advisor will evaluate the PhD dissertation proposal and provide scores and written listings of strengths and weaknesses in each category as outlined on the accompanying evaluation form. This listing will provide a basis for the NIH scoring system (1-9) in each area as well as in overall impact of the proposal. These evaluations will be shared with the PhD student to facilitate **the oral defense of the dissertation proposal before the members of the committee and the external reviewer** and to facilitate submission of the dissertation proposal for extramural funding. The PhD student should revise their PhD dissertation proposal in response to the recommendations of the dissertation committee and the external reviewer to successfully pass the written qualifying examination. The final written and oral qualifying exam result (following revisions to the dissertation proposal if needed) is signed by all committee members (Form EE).

PhD written qualifier evaluation form (additional pages can be added as needed)

Student:

Title of PhD dissertation proposal:

Date of Review:

Evaluator:

Significance:

Investigator:

Innovation:

Approach:

Environment:

Overall impact:

Selection of the thesis/dissertation advisory committee:

Dissertation Committee: Doctoral and Master's dissertation/thesis committees shall be composed of a minimum of four qualified members that includes the dissertation committee chair (Research Mentor). Each person on the committee must be a member of the University of Louisville Graduate Faculty.

Selection of dissertation committee members requires the following:

1. The dissertation committee chair (primary faculty mentor, i.e., Research Mentor) must have Graduate Research Training Faculty Status approved by the Department of Pharmacology and Toxicology.
2. The dissertation committee must have at least one member of the primary PhTx faculty with Graduate Research Training Faculty Status¹.
3. The dissertation committee must have at least one member outside the primary PhTx faculty with Graduate Research Training Faculty Status.
4. All members of the committee must have graduate faculty status².
5. Another faculty member not on the committee will serve as the external reviewer. Two names should be submitted to the DGS and the final selection will be made by the PhD qualifying exam committee.

Once a Research Mentor has been selected the student in consultation with the mentor will submit to DGS the names of at least four faculty members that they wish to request to serve on their dissertation committee so that the DGS can ensure that the committee has the appropriate composition and that there are no conflicts of interest. (In cases where there is a potential conflict of interest additional requirements may be imposed. For instance, if a committee member is dependent on the mentor, then a sixth member must be appointed.) This is done by submitting a committee approval form (FORM AA). The DGS will review the committee composition, either making modification request or granting approval. Upon approval, the student needs to complete and submit a Thesis/Dissertation Advisory Committee Form (FORM BB), signed by all committee members. Since this dissertation committee must approve the student's research proposal, the appointment of the committee should occur as soon as possible after the faculty mentor has been selected. Upon receiving signatures from all committee members, the form is further signed by the DGS or ADGS if DGS is unavailable, and then by the Department Chair. The completed form is then forwarded to the School of Medicine Office of Graduate and Postdoctoral Studies for the Associate Dean's signature. A copy of the fully signed form is kept on record by the Graduate School, the department, and the student.

¹Graduate Research Training Faculty status entitles faculty to all the rights and responsibilities of Graduate Faculty status, and in addition the right to mentor graduate students and serve as chair of dissertation or thesis committees. This level of appointment requires evidence of teaching, active research and scholarly activity as provided by recent publications, abstracts and extramural grants. It also requires at least a 20% work assignment in research indicated on the faculty members annual work plan. Graduate faculty status will be reviewed at the time of the faculty member's periodic career review.

²Graduate Faculty status entitles faculty to teach in graduate courses, mentor Audiology clinical research/service projects, direct Speech Pathology graduate projects and serve on graduate student thesis

and dissertation committees. It requires an earned doctorate/terminal degree in the teaching discipline or a related discipline; evidence of experience in either: research, teaching, scholarship or creative activity; and a commitment to graduate education.

FORM EE: M.S. Thesis Defense & Ph.D. Proposal Defense
Department of Pharmacology and Toxicology
University of Louisville School of Medicine

Student's Name: _____

Date of Meeting: _____

- MS Thesis Defense only (complete sections A, B and comments)**
- PhD Proposal Defense only (complete sections A, C, page 2 and comments on both pages)**
- Joint MS Thesis & PhD Proposal Defense (complete ALL sections on both pages)**

Section A

Student's understanding of the research for stage of development.	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Needs Improvement	<input type="checkbox"/> Unsatisfactory
Student's ability to apply scientific methods in independent research.	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Needs Improvement	<input type="checkbox"/> Unsatisfactory
Student's ability to communicate science in oral and written English.	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Needs Improvement	<input type="checkbox"/> Unsatisfactory
Student's success in publication for the period.	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Needs Improvement	<input type="checkbox"/> Unsatisfactory
Individual Development Plan Completed	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Needs Improvement	<input type="checkbox"/> Unsatisfactory

Section B (Select only one):

- This student has successfully presented and defended work sufficient for the M.S. degree. When the thesis and documentation are in final form, the Committee recommends this student be awarded the M.S. degree.
- This student's M.S. defense is unsatisfactory. Additional work, presentation or research will be required before a recommendation can be made to award the M.S. degree. The additional work is listed in the comments section below.

Section C (Select only one):

- This student has successfully presented and defended his/her Dissertation Research Proposal and is recommended for Doctoral Candidacy.
- Changes and review of the Research Plan are required as delineated below before progression to Doctoral Candidacy.
- This student's presentation/defense of the Research Proposal is unsatisfactory. Additional work, presentation or research will be required before a recommendation can be made to progress to Doctoral Candidacy. The additional items required for completion are listed in the comment section below.

Comments (Required)—attach additional pages if necessary

**Rubric for Use in Defense of Dissertation Proposal/Oral and Written Qualifying Exams for the Ph.D.
in Pharmacology and Toxicology**

<u>Defense of written dissertation proposal:</u>	Satisfactory	Needs improvement	Unsatisfactory
<u>Proposal definition:</u> Delineates the proposed research & its key questions and hypotheses.			
<u>Literature of proposal:</u> Demonstrates sound knowledge of the literature of the research area and the field.			
<u>Project approach:</u> Applies appropriate methodology /technology. Understands the basis & interpretations thereof.			
<u>Context:</u> Student communicates the broader implications of the research, basic and/or applied.			
<u>Oral defense of proposal:</u>			
<u>Presentation:</u> Orally communicates concepts and details of the written proposal.			
<u>Response to questions:</u> Addresses questions and concerns with knowledge and professionalism.			
Comments (Required):			

Role	Printed Name	Signature	Date
Major Professor	_____	_____	_____
Committee Member	_____	_____	_____
Committee Member	_____	_____	_____
Committee Member	_____	_____	_____
Committee Member	_____	_____	_____
Committee Member	_____	_____	_____
Director Graduate Studies	_____	_____	_____
Student	_____	_____	_____